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PATENT COOPERATION TREATY

PCT

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference AP101530/SIM/JE		FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/FI 2003/000766	International filing date (day/month/year) 16.10.2003	Priority date (day/month/year) 17.10.2002	
International Patent Classification (IPC) or national classification and IPC D21H 23/22			
Applicant Metso Paper, Inc. et al			

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ (sent to the applicant and to the International Bureau) a total of 2 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand 06.05.2004	Date of completion of this report 11.01.2005
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer Susanna Lindfors/Els Telephone No. +46 8 782 25 00

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FI 2003/000766

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))
☐ publication of the international application (under Rule 12.4)
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:

pages 1 - 14 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒ the claims:

pages _____ as originally filed/furnished

pages* _____ as amended (together with any statement) under Article 19

pages* 16 - 17 received by this Authority on 08-09-2004

pages* _____ received by this Authority on _____

☒ the drawings:

pages 1 - 2 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (specify): _____

☐ any table(s) related to the sequence listing (specify): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (specify): _____

☐ any table(s) related to the sequence listing (specify): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FI 2003/000766

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1 - 14</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1 - 14</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1 - 14</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

The invention relates to a method and an apparatus for the manufacture of coating. The object of the invention is to reduce the amount of dissolved and free air in the coating and to control the mixing order of the coating components and the mixing intensity of different types of components. In the method according to the invention, the mixing of components is carried out by mixing two or more components in two or more mixing zones arranged in series and/or parallel, of which at least some are pressurized.

Reference is made to the following documents:

D1: EP 0605137 A1

D2: EP 0916765 A1

Document D1 describes a method and an apparatus for combining multiple components to form a coating material formulation. Two of the components are transmitted through separate flow paths to a first mixer (14) within which they are combined to form a mixture, and then the third component is added to the mixture in a second mixer (15) to form the coating material formulation for discharge. The first component is a resin, the second component is a supercritical fluid employed as a fluid diluent, and the third component is a catalyst. The system is pressurized and the pressure is about 2000 psi (7378 kPa).

Document D2 discloses a method and an assembly for separating foreign material from the machine circulation.

The invention according to amended claims 1 - 14 is not

.../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box V

disclosed by any of these documents.

D1 is considered to represent the closest prior art. The method according to claim 1 and the arrangement according to claim 11 differ from D1 in that the pressure level of at least some mixing zones is of about 100 - 1000 kPa.

The technical effect that is obtained by this feature is that less air is dissolved in the coating mix during mixing action. Thus, the technical problem to be solved by the invention can be seen as to minimize the amount of air that is dissolved in the coating mix during mixing action.

This problem is solved in the present invention by pressurising at least some of the mixing zones in which the mixing of the components is carried out.

D1 does not refer to this specific problem. D1 refers to the problem of minimization of the amount of an organic solvent in a coating by using a supercritical fluid as a diluent. No teaching of how to minimize the amount of dissolved air can be derived from D1 that would lead a person skilled in the art to the method or to the arrangement as claimed in amended claims 1 - 14. Thus, the invention is considered to involve an inventive step in view of D1.

Neither does D2 give any indication that would lead a person skilled in the art to the claimed method or arrangement.

Consequently, the invention according to amended claims 1 - 14 is novel and considered to involve an inventive step. The invention fulfils the requirement of industrial applicability.